

## Agate replaces rhino horn in Yemen's new dagger handles

Conservationists have been urging each other to come up with a substitute for rhino horn in the making of new daggers (*jambiyya*) in Yemen. At last, a Yemeni has produced dagger handles of locally quarried agate, which are both beautiful and durable.

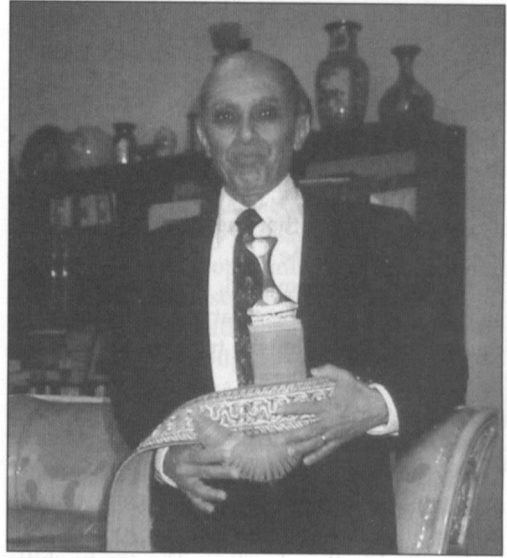
Often, when a substitute for an endangered wildlife product is introduced, especially a valuable one, it takes years to convince customers to use it. However, when the manufacturer of the agate handles, Ahmed al-Wazir, presented one to President Ali Abdullah Saleh of Yemen in 1994, he won instant acclaim. The President was delighted with it, as were the Yemeni ministers who also received them.

Agate and other attractive stones have been mined in Yemen for centuries, mainly for use in the jewellery that is part of Yemen's cultural tradition. Early in 1995 Yemen's President visited Europe and gave several of Ahmed al-Wazir's daggers with agate handles to senior dignitaries, as examples of the finest Yemeni craftsmanship.

In 1994 Ahmed al-Wazir made 35 daggers with stone handles, including some with jasper. He wanted to test their popularity with Yemen's elite, some of whom previously would accept only daggers with rhino horn handles. The ready acceptance of the new handles may be due to the fact that they are not made from artificial substances or materials newly introduced to Yemen. Now, Ahmed al-Wazir wants to manufacture them commercially at a retail price of around \$US1700, slightly higher than the price of the best new daggers with rhino-horn handles.

The timing could not be better. At least 70 kg of raw rhino horn was smuggled into Yemen last year, representing the death of a minimum of 24 rhinos. The horns were imported illegally from Kenya, Sudan and Ethiopia, via Djibouti and Oman, by boat and overland. Close to 175 dagger handles were made from the 70 kg of horn.

With Africa's black rhino population of 2500 now stable for the first time in decades and



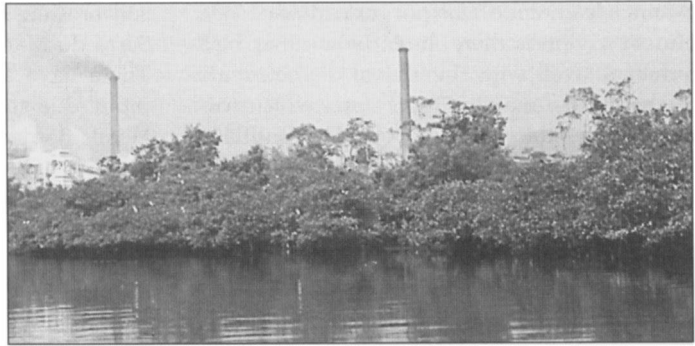
Dr Abdul Karim al-Iryani, Yemen's Foreign Minister, holds his new agate-handled *jambiyya* (Esmond Bradley Martin).

the 6800 white rhinos slightly increasing in number, any upsurge in the demand for rhino horn in Yemen would turn the tide again. It is thus imperative that the demand for illegal supplies of rhino horn be quelled as quickly as possible. The most effective way to do this is to encourage the richer Yemenis to buy stone-handled daggers instead of new ones made with rhino horn.

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## Cubatão – an important Brazilian mangrove swamp under threat

One of the largest mangrove areas remaining in south-eastern Brazil, Cubatão, lies in the estuarine area between the Serra do Mar massif and São Vincent island in the state of São Paulo. The estuary receives the waters of many rivers – including Cubatão, Piassaguera, Mogi and Onças – that drain the Serra do Mar



Scarlet ibises in mangroves at Cubatão (F. Olmos).

and also the runoff from the Henry Borden hydroelectric plant, which diverts water from the Billings Dam on top of the Serra. Its proximity to Brazil's largest port, Santos, and to its largest city, São Paulo, meant that the area was a prime target for industrial development; dredging and filling to provide industrial land started in the 1950s. This also meant diverting the courses of some of the rivers and cutting a deep channel to allow access for cargo ships to the steel plant, Cosipa. Dredged material was dumped along the 5-km-long channel, forming extensive mudflats.

By the early 1980s 23 industries had grown up in the area and together were releasing around 1000 tonnes of atmospheric pollutants every day plus an unknown amount of heavy metals, organochlorines, oil and other substances into the rivers flowing into the estuary. The situation was so bad that Cubatão was referred to as 'Death Valley' in the Brazilian press and was considered to be the most polluted place in the world (Kucinski, 1982). As a result, aquatic habits have been badly contaminated, and fish and crustaceans contain high levels of heavy metals (Boldrini *et al.*, 1989).

Today Cubatão is the site of the largest petrochemical complex in South America. The official view, expressed almost daily in the local media by the state pollution control agency, CETESB, the Cubatão municipality and the industries themselves, is that the situation has improved, with over 80 per cent of the pollution sources being under control. However, the bleached trunks of trees killed by acid rain dot the Serra do Mar, which was once covered by tropical Atlantic forest, and

the foul smell of pollutants pervades the air. Rubbish from nearby waste dumps is swept into the rivers by high tides, and the oil refinery and ships in the port discharge oil into the water.

Despite the pollution, the mangroves and adjoining mudflats support a surprising diversity of waterbirds, with a total of around 100 species having been recorded (Fialho *et al.*, 1989; Olmos, 1989, pers. obs.) Some species are quite abundant, numbering several hundred individuals. The local populations of oliveaceous cormorants *Phalacrocorax olivaceus*, little blue herons *Egretta caerulea*, snowy egrets *Egretta thula*, roseate spoonbills *Ajaia ajaja*, yellow-crowned night herons *Nycticorax violacea* and Bahama pintails *Anas bahamensis* are the largest in the state. Some species breed elsewhere but use Cubatão as a feeding ground after dispersing. For example, most spoonbills at Cubatão are immature birds from colonies near Lagoa dos Patos in the extreme south of the country.

There is a resident breeding colony of 380 scarlet ibises *Eudocimus albus ruber* in mangroves next to the thermally polluted Onças River, which receives the run-off from the Cosipa steel plant. This population is the largest south of Maranhão state (Martuscelli and Olmos, unpubl. data). The birds do not stray far from the colony site and outside the breeding season their main foraging ground is a stretch of hypersaline swamp with dying mangrove trees and large mudflats.

Each summer (December–April) at least five ospreys *Pandion haliaetus*, both adults and juveniles, fish in the most disturbed area, the

channel leading to Cosipa port; at least one bird overwinters there. In early summer bird numbers swell with the arrival of thousands of shorebirds, mainly *Tringa* spp., which forage along the extensive tidal mudflats. Cubatão is the single most important area for these birds and the only wintering area in south-eastern Brazil (Sick, 1994). There have been some unusual records. A pair of black-necked swans *Cygnus melanocoryphus* was observed on an artificial freshwater pond adjacent to the mangroves in March 1988 (Fialho *et al.*, 1989), the first state record since the beginning of the century (Pinto, 1978) and an immature jabiru stork *Jabiru mycteria* was captured in the area in late 1990, an unexpected straggler on the Atlantic coast of South America – the species is now mainly restricted to the Llanos and Pantanal wetlands.

Other species of conservation concern – such as the river otter *Lutra longicaudis* and broad-snouted caiman *Caiman latirostris* – have been seen in the mangroves and nearby rivers, while crab-eating racoons *Procyon cancrivorus* and coypus *Myocastor coypus* are common throughout the area.

Although many species still survive at Cubatão, they represent only a fraction of the former diversity of wildlife. Only 5 of an original 29 sq km of mangroves remain in good condition: 18 sq km have been degraded by pollution and 6 sq km have been built on (Silva *et al.*, 1991). Increasing pollution and shipping activity have resulted in the extinction of the local population of the tucuxi dolphin *Sotalia fluviatilis*, which was once common in the mangrove-fringed channels (Luederwaldt, 1919). Bottle-nosed dolphins *Tursiops truncatus*, which used to follow ships entering Santos port, disappeared in the 1950s, and migrating Franciscana or La Plata dolphins *Pontoporia blainvillei*, once seen every winter in Santos and São Vicente bays, disappeared as regular visitors in the early 1980s.

While human activity has led to the loss of habitat for many species, some birds have increased in numbers. Luederwaldt (1919) reported fewer birds from the same area at the beginning of the century. The mudflats are more extensive now due to dredging channels,

soil erosion following the destruction of the Serra do Mar vegetation and building works. There have also been changes in freshwater input due to increased discharges from the Henry Borden hydroelectric project and river diversion. Increases in organic matter input from sewage have led to greater abundance of invertebrate prey for birds. However, the mudflats are heavily polluted and this must have long-term deleterious effects on invertebrate prey populations and the birds themselves.

Cubatão faces further threats apart from continuing pollution. There is increasing pressure to reclaim the remaining mangroves and provide land for building homes for the large human population living in poor conditions around the industrial complexes. There are also proposals to expand Santos port, which would destroy the best foraging areas for birds and the breeding site of scarlet ibises and several species of herons.

Although mangroves are protected by Brazilian law, there are strong political and financial interests against conserving the area. The law has been ignored repeatedly, with local authorities responsible for destroying several mangrove areas for development projects. Only strong pressure can prevent the remaining wildlife of the Cubatão mangroves being lost for ever. To counteract the most immediate threats, the state agency in charge of protected areas, Instituto Florestal, put forward a proposal to create a state park. This was sent to the former state governor, who ignored it. The proposal will be sent again to the new governor, who took charge in 1995, but the results of this initiative remain to be seen.

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## Pelicans fail to nest as normal at Kaziranga National Park in 1994

The spot-billed pelican *Pelecanus philippensis* failed to breed in one of its main strongholds in India in 1994, giving rise to fears for its future there. The species is widespread but globally threatened and its range extends from India to China and south to parts of Indonesia. It has been recorded as nesting in several parts of the Indian state of Assam but the major nesting colonies are in the 430-sq-km Kaziranga National Park (KNP). Spot-billed pelicans previously nested in the Mihimukh area of the KNP and in 1986 around 600 nests were recorded. However, increased disturbance from tourists resulted in the pelicans moving their nesting colonies to the Kaladuar area of the park. Totals of 155 and 219 nests were recorded in 1991 and 1993, respectively.

The breeding season of the pelican in Assam starts in mid-September and by March the nests are deserted. A visit to KNP on 5–7 November 1994 found only one nest in the Kaladuar area and a subsequent visit on 20–23 December to other possible nesting sites in the park failed to discover further nests.

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The main reason for the decline in the spot-billed pelican numbers and the almost total failure to breed may have been due to the considerably reduced level of annual flooding in 1994. Floods play an essential role in maintaining the wetland areas and also flush the invasive, introduced water hyacinth into the Brahmaputra River. The lack of floods resulted in the wetlands being covered by water hyacinth until late October, when the park managers cleared it away manually. This was probably too late for the pelicans, which need areas of open water to feed.

A visit to the 60-sq-km Panidihing wetland in the Sibsagar District of Assam, about 120 km east of KNP, in January 1995 found around 500 spot-billed pelicans there. These birds had presumably moved from Kaziranga but there was no evidence of nesting.

Numbers of spot-billed pelicans are fast declining throughout their range and the recent failure of the species to nest in one of its major strongholds is of serious concern. A long-term conservation and management plan for *Pelecanus philippensis* in Assam is required urgently to stem further declines.

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## Correction: Elephants – four years after the ivory trade ban

The April 1995 issue (*Oryx*, **29** (2), 74–76), carried a summary of the report *Four Years After the CITES Ban: Illegal Killing of Elephants, Ivory Trade and Stockpiles*. As a result of a misunderstanding, we said that the report was a result of research by the IUCN/SSC African Elephant Specialist Group (AESG) and TRAFFIC. In fact, the report was an AESG report, the extensive research and subsequent report were financed by WWF–International, WWF–US and the US Fish and Wildlife Service. TRAFFIC served in a consulting capacity in the project.

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